News Release

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U.S. Geological Survey

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USGS Has a Blast at NASA Langley

Scientists Probe Chesapeake Bay Impact Crater

Note to Editors: Scientists, technicians and representatives of local, state, and federal agencies involved in the Chesapeake Bay Impact Crater Project will host a **special media session on Thursday, Aug. 3 at 1:30 p.m. at NASA Langley Research Center**. Opportunities will be available for photos of the drilling operation and core sample, as well as interviews with scientists. Please dress for the field and the weather. For **directions and media access to NASA Langley**, **call the NASA number above.**

This summer, the U.S. Geological Survey (USGS) is drilling a big hole in NASA's backyard. As it turns out, NASA Langley at Hampton, Va. sits near the edge of a 51-mile-wide impact crater created 35 million years ago when a meteor or comet slammed into the ocean near the present-day mouth of the Chesapeake Bay.

"People living in southeastern Virginia are affected by this ancient cataclysm daily," said Greg Gohn, USGS Chief of the Chesapeake Bay Impact Crater Project. "The impact severely disrupted the rock units that today are important aquifers providing drinking water to the Hampton Roads area. We believe that large areas within the crater are unsuitable for future water-supply development. Drilling this exploratory bore hole and others in the next few years will help in understanding how to best develop and manage the region's ground-water supply," said Gohn.

This USGS research effort, hosted by NASA, involves drilling a 2,700-foot-deep hole in the Earth, bringing up a core (underground sediment and rock) for analysis, and setting off underground, firecracker-like blasts to perform a seismic reflection survey across the crater's margin. Drilling associated with the crater project began on July 23 and will continue throughout the summer. The seismic survey will begin in mid-August.

Some of the data gathered by the scientists will be incorporated into the regional groundwater flow model that was developed by USGS water resources specialists in Virginia. Results of the project, which is supported and partially funded by the Hampton Roads Planning District Commission (HRPDC) and the Virginia Department of Environmental Quality (VA DEQ), will assist local and state water resources managers in making better decisions concerning the availability and use of groundwater, an important water supply in southeastern Virginia.

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Joel S. Levine, a senior research scientist at NASA Langley, looks forward to the shared science and agency cooperation at the local, state, and federal levels. “The USGS drilling project will permit a detailed investigation of a very significant event in the history of our planet that affected all four components of the Earth system – the atmosphere, ocean, land, and biosphere,” said Levine. “We’re working closely with USGS scientists to assess what we can learn about the Earth’s early atmosphere from analysis of the cores obtained from drilling.”

At the time of the impact 35 million years ago, sea level along the East Coast was higher and most of eastern Virginia was submerged. According to USGS scientist, David Powars, the object - meteor or comet - “sliced through the water and thousands of feet of underlying sediment, colliding violently with continental bedrock several miles beneath the surface.”

Powars added that the surrounding region was engulfed in widespread devastation and, “within minutes, millions of tons of water, sediment, and shattered rock were cast high into the atmosphere for hundreds of miles along the East Coast.” An enormous seismic sea wave, or tsunami, rushed westward, engulfing the land and possibly even overtopping the Blue Ridge Mountains.

In 1993, T. Scott Bruce of VA DEQ, and David S. Powars and C. Wylie Poag of the USGS found evidence of these startling events. Earlier this year, these scientists received the Thomas Jefferson Award from the Virginia Museum of Natural History in recognition of their discovery of the Chesapeake Bay Impact Crater. Research drilling and related studies have been conducted across the region for the past several years.

For more information on the Chesapeake Bay Impact Crater, visit the following web sites: http://woodshole.er.usgs.gov/epubs/bolide/; http://marine.usgs.gov/fact-sheets/fs49-98/

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As the nation's largest water, earth and biological science, and civilian mapping agency, the USGS works in cooperation with more than 2,000 organizations across the country to provide reliable, impartial scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, contribute to the sound conservation and the economic and physical development of the nation's natural resources, and enhance the quality of life by monitoring water, biological, energy, and mineral resources.

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